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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,674	12/08/2003	Daniel J. Lenchan	COOL-01901	4281
28960 7590 04/30/2008 HAVERSTOCK & OWENS LLP 162 N WOLFE ROAD SUNNYVALE, CA 94086				
EXAMINER				
CIRIC, LJILJANA V				
ART UNIT		PAPER NUMBER		
3744				
MAIL DATE		DELIVERY MODE		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/731,674

**Applicant(s)**

LENEHAN ET AL.

**Examiner**

Ljiljana (Lil) V. Ciric

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 37-40, 42, 44-72, 108 and 109 is/are pending in the application.
- 4a) Of the above claim(s) 44-48 and 51-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 37-40, 42, 49, 50, 108 and 109 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-849)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :06/08/2007, 09/10/2007, 11/23/2007, 12/07/2007, 12/26/2007, 03/17/2008, 04/16/2008.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is in response to the reply filed on January 14, 2008.
2. Claims 37 through 40, 42, 44 through 72, 108, and 109 remain in the application. Of these, claims 108 and 109 are new, whereas the remaining claims have all been amended, either directly or indirectly.

### ***Response to Arguments***

3. Applicant's arguments with respect to the claims as filed on January 14, 2008 have been considered but are moot in view of the new grounds of rejection presented herein.

### ***Election/Restrictions***

4. Claims 44 through 48 and 51 through 72 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 6, 2006.

### ***Allowable Subject Matter***

5. The indicated allowability of claims 41 through 43 as noted in the previous Office action is hereby withdrawn in view of the newly discovered references to Patel et al. and to Goodson et al. Rejections based on the newly cited references follow.

### ***Information Disclosure Statement***

6. The information disclosure statement filed on April 16, 2008 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Drawings***

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7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one additional temperature sensor as recited in claim 49, the at least one additional temperature sensor as recited in claim 50, and the at least one additional temperature sensor as recited in claim 108 must each be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 37, 42, 49, 50, 108, and 109 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Upon reconsideration, while the preamble of base claim 37 appears to recite that the intended use of the method is for controlling both the fluid flow rate of at least one pump AND an air flow rate of at least one fan, the body of the claim (and the bodies of the claims depending therefrom) fail(s) to recite that both a fan and a pump are to be provided and furthermore fails to require that the controller control both the air flow rate of a fan and the fluid flow rate of a pump, thus rendering indefinite the metes and bounds of protection sought by the claim and all claims depending therefrom.

Claims 37, 42, 49, 50, 108, and 109 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: providing at least one pump and providing at least one fan.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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11. Claims 37, 42, 49, 50, 108, and 109 are rejected under 35 U.S.C. 102(e) as being anticipated by Goodson et al. (U.S. Patent No. 7,334,630 B2).

The applied reference has at least one common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Goodson et al. discloses a method of controlling an air flow of at least one fan in a cooling system for cooling at least one heat producing device 50 essentially as claimed, including, for example: providing a micro heat exchanger 200 thermally coupled with the at least one device 50, the heat exchanger 200 containing internal flow regions comprising microchannels [see column 7, lines 32-34] for distributing a fluid therethrough; providing at least one pump 300 to provide fluid to at least a portion of the heat exchanger 200; providing at least one temperature sensor 250-4 or 250-5 coupled to the at least one device 50 for measuring at least one temperature value of the least one device 50; providing at least one additional temperature sensor 250-6 for measuring the temperature values of ambient air around the device 50; providing at least one additional temperature sensor 250-1 or 250-2 for measuring temperature values of the fluid in the cooling system; providing a controller 500 to selectively control at least the fluid flow rate of the at least one pump 300 based on the temperature values received from the temperature sensors 250-1 through 250-6. Goodson et al. does not disclose at least one fan, but the claims as written do not necessarily require that a fan be provided as part of the inventive method. The reference thus reads on the claims.

12. Alternately, claims 37, 42, 49, 50, and 108 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel et al. (U.S. Patent No. 6,826,922 B2).

Patel et al. discloses a method of controlling an air flow of at least one device or rack 12 (i.e., which may comprise an electronic computer or a microprocessor/computer, for example), essentially as claimed, including, for example: providing a heat exchanger or heat exchanger unit or HEU 22 configured to receive cooling fluid and thus inherently including an internal flow region for distributing fluid; providing at least one fan 30; providing a closed loop for circulating the fluid flowing through the HEU 22 as shown in Figures 1 and 2; providing at least one fan and at least one pump 38; providing at least one temperature sensor 48 coupled to the at least one device 12 as shown in Figure 2 for measuring at least one temperature value of the at least one device 12; providing an additional at least one sensor 46 as shown in Figure 2 for measuring at least one additional temperature value in the cooling system; providing at least one additional temperature sensor on a mobile device [see column 6, lines 57-67] for measuring the temperature values of ambient air around the device 12; and, providing an HEU controller 54 as shown in Figure 4 which selectively controls at least one of the fluid flow rate and the air flow rate based on the sensed temperatures as shown in Figure 4, for example.

The reference thus reads on the claims.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner works a flexible schedule but can normally be reached between the hours of 10:30 a.m. and 6:30 p.m. on most weekdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained



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from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ljiljana (LiI) V. Ciric/

Primary Examiner, Art Unit 3744